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Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

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ENTOMOLOGICAL NEWS

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A Phylogenetic Study of the Thoracic Sclerites of the Psychodoid Diptera, with Remarks on the Interrelationships of the Nematocera.

By G. C. CRAMPTON, Mass. Agricultural College, Amherst, Mass.

(Continued from page 38.)

The Tanyderidae and such Psychodids as *Bruchomyia* are extremely primitive Diptera, and in many respects, the Psychodoidea are as near the type ancestral to the rest of the Diptera, as any known forms. On the other hand, none of the Psychodoidea of which we have any knowledge, has a meral region not completely fused with the lower portion of the epimeron in the mesothorax, and since the fused condition represents a considerable degree of specialization, this and other specializations (such as lack of ocelli etc.) preclude our regarding the Psychodoidea as the common stock from which the rest of the Diptera have sprung. The most that can be said of the Psychodoidea in this respect, is that they have retained as many ancestral characters as any Diptera have, and in making a "phylogenetic tree" of the Nematocera, such as that shown in Fig. 12, the lowest place might be assigned to the Psychodoidea.

The Tipuloidea, including the families Tipulidae and Limnobiidae—and possibly the Trichoceridae also, although the latter are extremely close to the Mycetophiloid family Anisopodidae—are likewise extremely primitive Diptera, and if the Trichoceridae be included among them, some have retained the ocelli lost in the Psychodoidea. The Tipuloidea however, are also specialized in many particulars (although some of them have retained the meron as a distinct sclerite still adherent to the middle coxa) and cannot be regarded as the common stock from which the rest of the Diptera were de-

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rived. We are apparently justified in stating that the Protodiptera such as *Aristopsyche* represent as nearly as any known forms, the ancestral stock of the Diptera, and from this common stock, the first lines of development to branch off were the Psychodoid line (at whose base are such forms as *Macrochile*) and the Tipuloid line, at whose base are such forms as *Architipula*, etc. As Dr. Alexander points out, the Architipulidae (and the Cylindrotomine Tipuloiods) are annectant between the Limnobiine and Tipuline types, and he is inclined to regard the Limnobiidae as merely a subfamily of the Tipulidae. German Dipterists, however, generally recognize the family Limnobiidae, and there is considerable to be said in favor of the latter view.

The Trichoceridae are at the base of the line of development leading to the Anisopodidae and other "Mycetophiloid" types, and it is very difficult to determine whether the Trichoceridae are Tipuloids or "Mycetophiloids." Dr. Alexander tells me that the larvae of the Trichoceridae are remarkably similar to those of the Anisopodids, in being eucephalous and amphipneustic, and in this respect the Anisopodids and Trichocerids are quite different from the true Tipuloids, and are on the side of the "Mycetophiloids." I do not know where the Trichocerid line of development could have come off from any known Tipuloid or Psychodoid type, since the Trichocerids have well developed ocelli and other primitive features lacking in the Psychodoids and Tipuloids. The ancestors of the Trichocerids were apparently some form related to the Protodiptera, and at present this is all that we are justified in saying concerning their ancestry. In their general habitus, the Trichoceridae are Tipuloid, but they have so many features in common with the Anisopodidae that it might be preferable to group them in the same superorder with the Anisopodidae, which were undoubtedly descended from *Trichocera*-like ancestors.

The Anisopodidae are so closely connected with the "Mycetophiloids" such as *Mycetobia, Sciara,* etc., that it is necessary to include the Anisopodidae (the old family "Rhyphidae")

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in whatever superfamily includes the Mycetophilidae. *Mycetobia* is anatomically annectant between the Anisopodids and the rest of the "Mycetophiloids" and Mr. Edwards believes that *Mycetobia* is actually an Anisopodid, while other Dipterists have claimed that *Mycetobia* is a Mycetophilid. Anatomically, there is no doubt of its annectant character, and because of the synthetic nature of *Mycetobia* I have no hesitancy in grouping the Anisopodidae in the same superfamily with the Mycetophilids. The adult Anisopodids are more primitive, anatomically, than any Mycetophilid,* so that they must be regarded as occupying a position at the base of the "Mycetophiloid" line of development; and, in fact, the adult Anisopodidae are anatomically astonishingly similar to what we know must have been the type ancestral to the rest of the Nematocerous lines of development presently to be discussed.

The Itonididae (Cecidomyidae) were undoubtedly descended from Mycetophilid-like ancestors, and hence should be grouped in the same superfamily with the Mycetophilids. Furthermore, such forms as *Plecia*, which is either a Bibionid, or is extremely close to the Bibionids, is anatomically just like *Hesperinus*,

* As every student of comparative anatomy knows full well, living things exhibit "heterospecialization (*i. e.*, they are not uniformly specialized in all particulars and may retain some rather primitive features, while they are much more highly specialized in other respects); and a group "B," for example, may retain a single feature in a more primitive condition than is true of the same feature in another group "A," which in general is much more primitive than group "B." This is well illustrated in the feature of respiration in the larvae of the Mycetophilid and Anisopodid groups, which have a common ancestry. Larval Mycetophilids, being peripneustic, are in this one respect more primitive than are the larval Anisopodids and Trichocerids, which are amphipneustic. In other respects, however, the Anisopodids and Trichocerids are much more primitive than the Mycetophilids are; consequently, it would be folly to assign to the Mycetophilids a lower position in the evolutionary scale, in deriving all of these forms from an ancestry from which the Anisopodids and Trichocerids have departed much less (in general) than the Mycetophilids have.

and both of these genera are extremely like *Pachyneura,* which Mr. Edwards thinks is an Anisopodid, and all of these genera are very like the Anisopodids *Olbiogaster* and *Lobogaster* in numerous anatomical details. These insects connect the Bibionids so closely with the Anisopodidae, and the Mycetophilids intergrade with the Anisopodidae so markedly, that there can be no doubt that the Bibionids and the Mycetophilids (with the Itonidids) were descended from Anisopodid-like ancestors; and I would unhesitatingly group together the Bibionids, Mycetophilids and Itonids in a single assemblage to which the superfamily designation Bibionoidea might be applied.* The only question in the matter is where to place the Trichoceridae, which are like the ancestors of the Anisopodids. The Anisopodids themselves are undoubtedly "Mycetophiloid" in character (*i. e.,* should be grouped among the Bibionoidea) but the Trichocerids have remained so like certain Limnophiline Tipuloidea in many respects, that it is extremely difficult to decide whether to place them with the Bibionoidea, next to the Anisopodidae, or to leave them with the Tipuloidea. As Dr. Alexander points out, the amphipneustic, eucephalous larvae of the Trichoceridae are remarkably like those of the Anisopodids, and they differ from the typical Tipuloid larvae, while the adult Trichocerids have ocelli, which are lacking in the Tipuloids and the typical Tipuloid "V-shaped" suture is practically wanting in them. Dr. Alexander, however, is inclined to regard the Trichocerids as true Tipuloidea, and the opinion of such an authority on the group Tipuloidea is worthy of the utmost consideration. My own inclination would be to group the Trichoceridae with the Anisopodidae in the superfamily

* There is considerable need of a group intermediate in rank between a superfamily and a suborder, to contain the superfamilies Mycetophiloidea and Bibionoidea, since these superfamilies, although extremely closely related, are nevertheless quite distinct. Since there is no such group of which I have any knowledge, I have "lumped" the superfamilies Mycetophiloidea and Bibionoidea into a single unwieldy "superfamily" Bibionoidea (*sensu lata*) in order to express the close relationship between the two.

Bibionoidea, and in any case, I would place the Anisopodidae in the superfamily Bibionoidea, irrespective of the Trichoceridae, leaving the ultimate disposition of the Trichocerids to be finally determined when a wider knowledge of the types connecting them with their nearest relatives has been gained.

The Simuliids, Thaumaleids (Orphnephilids), Chironomids, Dixids and Culicids could readily be grouped in a single assemblage or superfamily, the Culicoidea, whose line of development arose from the Anisopodid-like ancestors of the Bibionoidea, as is indicated in the diagram of the phylogenetic tree in Figure 12.

The origin and affinities of the Blepharocerids are still a mystery, and the Blepharocerids form such an isolated group, that it is preferable to consider them as constituting a distinct superfamily, the Blepharoceroidea. It is extremely probable that the Blepharocerids arose from ancestors allied to the Anisopodid-like common ancestors of the Culicoids and Bibionoids.

In brief, we may say that there were three main lines of development leading from ancestors like the Protodiptera, as is indicated in the "tree" shown in Figure 12. One of these lines of development (with *Macrochile* at its base) leads to the Psychodoids; another line (with *Architipula* at its base) leads to the Tipuloids; and a third line (with the Trichocerids at its base) leads to the Anisopodid-like forms in the group Bibionoidea. The Culicoidea were apparently derived from Bibionoid forms, and the Blepharocerids were probably derived from a similar source.

Since the Tipuloids and Psychodoids are the most primitive representatives of the Nematocera, they might be grouped together in an assemblage to which the old designation Polyneura, used in a new sense, might be applied—or if confusion would arise from this peculiar usage, they might be called Protonematocera, since they are the most primitive of the Nematocera. The rest of the Nematocera (*i. e.*, the Bibionoids, Culicoids and Blepharoceroids) might then be designated by the old term Oligoneura, used in a new sense—or if this unaccustomed usage of the term would give rise to confusion, they

might be called Eunematocera. This grouping, and the arranging of the Nematocerous families in natural assemblages expressing their phylogenetic development more accurately, seems preferable to the older arrangement which did not take into consideration the various interrelationships of the lines of descent of the Nematocerous families.

The Entomological Observations of John Esquemeling, Buccaneer, on the Island of Hispaniola in 1666.

By HARRY B. WEISS, New Brunswick, New Jersey.

The firm of George Routledge and Sons, Ltd., of London, has recently reprinted as one of their *Broadway Translations,* the "Buccaneers of America, a true account of the most remarkable assaults committed of late years upon the coast of the West Indies by the buccaneers of Jamaica and Tortuga, both English and French, wherein are contained more especially the unparalleled exploits of Sir Henry Morgan, our English Jamaican hero, who sacked Porto Bello, burnt Panama, etc.," by John Esquemeling, "one of the Buccaneers who was present at these tragedies." In 1914, Esquemeling's account was published by Stokes under the title "Pirates of Panama or Buccaneers of America," edited and illustrated by G. A. Williams and very likely there have been other previous printings in this country, but the entomology in the account has remained in obscurity.

According to Mr. William Swan Stallybrass, the editor of the first account mentioned in these notes, Esquemeling's narrative was written originally in Dutch and published in Amsterdam in 1678, under the title "De Americaenische Zeerovers." In 1681 a Spanish translation appeared under the title "Piratas de la America" by Alonso de Buena-Maison, M.D., and this was followed by translations into other European languages. The *Broadway Translation* edition is a reprint of the first and second editions of the English translation printed in London in 1684.

Nothing appears in the standard encyclopedias about John

Esquemeling, but in the "Dictionary of Universal Biography" by Albert M. Hyamson (1916), Alex. Olivier Exquemelin anglicized as John Esquemeling is listed as a Flemish traveler, seaman and writer on travel (1645-1707). No mention is made of his activity as a pirate and one must turn to his book for a statement of his occupations and observations. The English translator wrote as follows about him. "I take him to be a Dutchman, or at least born in Flanders, notwithstanding that the Spanish translation represents him to be a native of the kingdom of France—his printing this history originally in Dutch, which doubtless must be his native tongue, who otherwise was but an illiterate man, together with the very sound of his name, convincing me thereunto."

According to his own account, he sailed from Havre de Grace, France, in the service of the West India Company of France, on May 2, 1666 and reached Tortuga, a small island on the north side of Hispaniola or Haiti on July 7 of the same year. After a brief description of some of the plants of this island and the quarrels between the French and the Spaniards for possession, Esquemeling tells how he was sold twice, once as a servant of the West India Company when they disposed of their holdings and again while sick, to a surgeon for 70 pieces-of-eight. Upon recovering he was given his liberty with the understanding that he was to pay his late master 100 pieces-of-eight when able to do so. Following this he joined "the wicked order of the Pirates, or Robbers at Sea" and continued with them until 1672. Previous to his recital dealing with their thieving and bloodthirsty activities, he describes some of the fruits, trees and animals found at Hispaniola and the following portion relating to insects is quoted on account of its general historic interest:

"As to the insects which this island produces, I shall only take notice of three sorts of flies, which excessively torment all human bodies, but more especially such as never before, or but a little while, were acquainted with these countries. The first sort of these flies is as big as our common horse-flies in Europe. And these, darting themselves upon men's bodies, there stick

and suck their blood till they can no longer fly. Their importunity obliges to make almost continual use of branches of trees wherewith to fan them away. The Spaniards in those parts call them mosquitos or gnats, but the French give them the name of *maranguines*. The second sort of these insects is no bigger than a grain of sand. These make no buzzing noise, as the preceding species does, for which reason it is less avoidable, as being able also through its smallness to penetrate the finest linen or cloth. The hunters are forced to anoint their faces with hog's-grease, thereby to defend themselves from the stings of these little animals. By night in their huts or cottages, they constantly for the same purpose burn the leaves of tobacco, without which smoke they were not able to rest. True it is that in the daytime they are not very troublesome, in case any wind be stirring, for this, though never so little, causes them to dissipate. The gnats of the third species exceed not the bigness of a grain of mustard. The colour is red. These sting not at all, but do bite so sharply upon the flesh as to create little ulcers therein. Whence it often comes that the face swells and is rendered hideous to the view, through this inconvenience. These are chiefly troublesome by day, even from the beginning of the morning until sun-setting, after which time they take up their rest, and permit human bodies to do the same. The Spaniards gave these insects the name of *rojados*, and the French that of *calarodes*.*

"The insects which the Spaniards call *cochinillas*, and the English glow-worms, are also to be found in these parts. They

* With the approval of Mr. Weiss, his article has been submitted to Dr. F. M. Root, of the Department of Medical Zoology, The Johns Hopkins University, who has studied the blood-sucking flies of certain of the West Indies, in the hope that he might be able to definitely identify Esquemeling's "three sorts of flies." Thanks to his kindness, the following is added from his letter, addressed to the editor:

"I have delayed my answer to your letter for several days in order to get the opinion of my former assistant, Dr. W. A. Hoffman, who has just returned from Haiti, where he has been working on the entomological side of a morbidity survey made by the International Health Board. His opinion is the same as my own, fortunately. We feel that the most probable identifications are as follows:

"Esquemeling's 'first sort' of flies probably refers to true mosquitoes, perhaps especially to the coastal species *Aedes taeniorhynchus* form

are very like unto such as we have in Europe, unless that they are somewhat bigger and longer than ours. They have two little specks on their heads, which by night give so much light that three or four of those animals, being together upon a tree, it is not discernible at a distance from a bright shining fire. I had on a certain time at once three of these *cochinillas* in my cottage, which there continued until past midnight, shining so brightly that without any other light I could easily read in any book, although of never so small a print. I attempted to bring some of these insects into Europe when I came from those parts, but as soon as they came into a colder climate they died by the way. They lost also their shining upon the change of air, even before their death. This shining is so great, according to what I have related, that the Spaniards with great reason may well call them from their luminous quality *moscas de fuego*, that is to say fire-flies.

"There be also in Hispaniola an excessive number of *grillones* or crickets. These are of extraordinary magnitude, if compared to ours, and so full of noise that they are ready to burst themselves with singing, if any person comes near them."

Notes on the Genus Parabombylius (Diptera).

By REGINALD H. PAINTER, Ohio State University, Columbus, Ohio.

The group to which the following species belong was first recorded when Coquillett referred the species *syndesmus* and *ater* to Rondani's genus *Thlipsogaster* (Trans. Am. Ent. Soc., 21, p. 108). In 1899, Williston (Psyche, p. 331) showed that these species do not belong to this genus but left the question of their generic status in abeyance. In *Biologia Centrali-*

niger, which is often very abundant and troublesome. His 'second sort' are evidently *Culicoides*, of which *C. furens* is the commonest coastal form throughout the Greater Antilles. The 'third species' is more difficult to identify, but the day-biting habits would indicate some species of *Simulium*, and Esquemeling's statement that 'they sting not at all, but do bite so sharply upon the flesh as to create little ulcers therein' might be his way of expressing the fact that the actual bite of *Simulium* is painless, but an ulcer-like lesion develops later."

FRANCIS M. ROOT.

Americana (Diptera Suppl., p. 286) the same author redescribed *Bombylius albopenicillatus* Bigot and referred this species and a new one *(dolorosus)* to this same group. In 1907 (N. Y. Ent. Soc. Jour., p. 1) he erected the genus *Parabombylius* for these four species with *ater* Coq. as genotype.

This genus is separated from *Bombylius* by having cell R5 narrowly open or closed in the margin of the wings, and by having a conspicuous patch of silvery scales between the base of the antennae and the eyes. All the species have several short, thin spines or bristles on the third joint of the antennae, which spines are lacking in most of the species of *Bombylius* known to me. They are present however in *fulvibasis* Macq., *validus* Lw., and possibly *lancifer* O. S. The species of *Parabombylius* are all small and the sexes often differ, sometimes quite remarkably.

Notes concerning a considerable extension of the known range of some of the species are given here, also descriptions of four new species. I am indebted to Prof. Jas. S. Hine and Mr. R. C. Shannon for loan of material. Also to Dr. Aldrich of the U. S. National Museum for a loan of cotypes of P. *ater* and *syndesmus* and other material for study.

Key to Species.

1. Ground color of tip of male abdomen and entire abdomen of female yellow ..... *syndesmus* Coq.
   Ground color of abdomen entirely black or very dark brown 2
2. Entire pile and tomentum of dorsum of abdomen and thorax unicolorous, orange or dark yellow ..... *ater* Coq.
   Pile and tomentum of dorsum of thorax or abdomen partly white or black 3
3. Pile and tomentum of dorsum of thorax and abdomen with no black intermixed ..... *subflavus* n. sp.
   Some black intermixed with pile and tomentum 4
4. Light colored pile of dorsum of thorax and abdomen partly white or yellow 5
   Light colored pile of dorsum of thorax and abdomen reddish orange or wanting 6
5. A stripe of short white pile above the base of the wing to the humerus 7

No such stripe present .....*albopenicillatus* Bigot
6. No orange pile on abdomen .....*dolorosus* Will
Orange pile and tomentum present on abdomen *pulcher* n. sp.
7. Pile on face longer than first joint of antenna and on antennae also long, no patch of white scales on occiput.
vittatus n. sp.
Pile on face shorter than first joint of antennae and on antennae short, a patch of white scales on occiput.
maculosus n. sp.

Parabombylius ater (Coq.)

Two females and one male taken at Brownwood, Texas; September 11 to 16 on Broomweed *(Gutierrezia texana)*. Two females and ten males taken near Abilene, Texas, September 14. These latter were all taken in in a patch of Broomweed less than four feet square. They seemed to be continually coming out of the center of the patch. Mr. Frank M. Hull has collected a number of specimens of this species near A. & M. College, Miss. They were hovering over hot red sand. There are also several specimens in the Ohio State University Collection from Vinton, Ohio, in June. Most of the specimens I have seen have a bright orange-colored pile instead of yellow as is the type. The exact shade of the specimens in the series is variable, however. The females are like the males except that there is less black pile on the venter.

Parabombylius albopenicillatus (Bigot)

One male taken April 30, on the west face of Mt. Barker, near Austin, Texas. It differs from the description in having a scattering of orange tomentum on the dorsum of abdomen and scutellum, and a few long yellow hairs among the black below the antennae. In my specimen there is a patch of yellow tomentum on either side between the characteristic white patch of the genus and the antennae.

There are two females in the collection of Mr. R. C. Shannon which agree with the description of this species. They are from Alto Pass, Illinois, July 29. All previous records are from Mexico.

Parabombylius dolorosus (Will.)

One female taken on Shoal Creek near 28th Street, Austin,

Texas, March 31, hovering over some water plants, may perhaps not be this species, although it differs only slightly. It lacks the white tomentum, as apparently did some of Williston's specimens; there are also no spots of tomentum on the sides of the abdomen, but those on the center, tho small, are strikingly prominent on the black background. These, with the orange-red tomentum on the scutellum, give this specimen a very characteristic appearance.

Parabombylius pulcher n. sp.

♀. Ground color opaque black, pleurae grayish, face with long black hairs and shorter, shining orange ones. Front orange tomentose with scattered, long, black hairs, more abundant on the ocellar tubercle. Occiput with bushy orange pile. Antennae black, first joint with long spiny hairs and with a few orange scales on the outside, second joint one half as long as the first, with shorter spines; third about equal to first two together, fusiform and slender, a scattered group of short spines towards its distal end. At the end of the third joint are three annuli, the last of which is light yellow. Mesonotum and scutellum with long black hair and scattered orange-red tomentum; mixed orange and black hair above the wings and on the pleurae, shorter and mostly orange below. Abdomen with scattered orange-red tomentum and long black hairs. Two small, but conspicuous, spots of yellow scales at the apex of the first segment, in the center below the tip of the scutellum; a patch of orange-red, stiff hairs on the sides of the first segment and on the dorsum of this segment for about one-fourth of the way across from each side; second and third segments with similar patches of hairs, but black on the basal half; fourth segment with shorter but similar hairs. Venter orange tomentose with long black hairs. Legs yellow, bases and under part of femora dark brown; spines black; underside of front femora with scattered, long, black hairs; the last joints of the tarsi dark brown; legs covered with yellow and black scales. Wings hyaline, basal half of cell R and cell C fumose, the former ending in a darker spot. Length 6 mm.

Holotype female collected at Austin, Texas, May 17, 1924, in my own collection.

Parabombylius subflavus n. sp.

♂. Ground color black, venter somewhat grayish; face with

long hairs, dark yellow on the lower part, brown and black above; a tuft of long black hairs above the ocellar tubercle. Occiput yellow pilose, a patch of silvery white scales opposite each humeral angle of the thorax. Antennae black, first two joints with long, stiff hairs, a few, short, scattered spines toward the end of the third; third joint about equal to the first two together, fusiform and slender with a distinct constriction near its base. At the end of the third joint are three annuli the last of which is light yellow. Most of the thorax and abdomen covered with whitish yellow pile. A patch of silvery scales in the center of abdominal segments, 2, 3, 4, 5 and 6; a tuft of blackish pile on the sides of segment 2; the pile at the bases of segments 3, 4 and 5 is more white than at the apex. On the venter there are a few, long, black hairs toward the apex; the pile on the coxae is mixed black and yellow. Legs yellow, coxae, tarsi, basal half of four front femora, basal fourth of hind femora, and tips of tarsi dark brown. Spines black, most of scales on legs yellow. Wings hyaline. Length 5.5 mm.

Holotype male, from Wilcox, Ariz., August 1 (A. K. Fisher), in the collection of the U. S. National Museum.

Parabombylius vittatus n. sp.

♀. Ground color black, face, front, and first joint of antennae with long, stiff, black pile. Front with appressed, orange-red, curly tomentum; occiput with orange-red tomentum, lighter below. Third joint of antennae longer than first two together, broader than either; second and third with short bristles; three annuli as in the other species. Thorax and scutellum orange-red tomentose and sparsely black pilose. A stripe of short white pile from the humeri to the bases of the wings is continued as a yellow stripe above the bases of the wings; two patches of similar white pile just back of the angles of the eyes on the mesonotum, a third in the middle just in front of the scutellum. Abdomen (greasy) is largely black tomentose, orange-red tomentose towards the apex with scattered, very long, black hairs here and on the scutellum. The pile on each side of the first segment is yellow, with appressed, white tomentum at the apex; similar tomentum occurs on the sides of the dorsum of segments 4 and 5 and in the center of 2, 3, 4 and 5. Venter, pleurae, and coxae entirely black tomentose and pilose. Legs a dark chocolate brown, ligther toward the tips. Wings hyaline, lightly tinged with brownish. Length 7.5 mm.

Holotype female from Filmore Canyon, Organ Mountains (alt. about 5700 ft.), New Mexico (Townsend), in the collection of U. S. National Museum.

Parabombylius maculosus n. sp.

♀. Ground color black, lighter beneath, face with short, stiff hairs, black with a few yellow ones intermixed; front orange tomentose with scattered, black hairs. The white scales occupy the entire area between the antennae and the eyes. Occiput yellow pilose, a patch of white scales opposite each humerus. First two joints of antennae with short, scattered, bristly hairs; third with a few shorter ones; third joint broader than first or second, longer than first two together, with three annuli, the third yellow. Thorax and scutellum with appressed, short, golden-yellow pile; a stripe of short, white pile above the bases of the wings between the humeri and post-alar callosity; a shorter, similar stripe opposite the dorsal angle of each eye; another short stripe in the center anterior to the base of the scutellum; scutellar spines yellow. Abdomen with appressed, yellow pile, white tomentum on the base of segment 1, on each side of the dorsum of segments 3 and 4 and the center of 6, a patch of black pile on the sides of segment 2; venter and pleurae yellow pilose, the latter lighter toward the front; coxae with a few black hairs. Legs yellow, base of femora, coxae and tarsi darker. Wings hyaline. Length 5 mm.

Holotype female from Tucson, Ariz., August 14, 1909 (A. K. Fisher), in the collection of the U. S. National Museum.

This may possibly be the female of *subflavus*, but since it differs greatly and since it comes from a quite widely separated locality, I have described it as distinct.

On the Genus Anomis (Lepid., Phalaenidae).

By Wm. Barnes & F. H. Benjamin, Decatur, Illinois.

Anomis Hbn.

Type *Anomis erosa* Hbn.

1821?, Hübner, Zutr. Exot. Schmett., II, 19, No. 144, ff. 287-288, *erosa* sole species and therefore type.

1823?, Hübner, Samml. Exot. Schmett., II, pl. 411, ff. 1-4, *exacta* sole species mentioned.

1825, Hübner, Verz. bek. Schmett., p. 249, mentions *exacta* and

erosa but gives no reference to *exacta* as if at the time of writing the Verzeichniss the name *exacta* was unpublished.
1874, Grote, Bull. Buff. Soc. N. S., II, 23, type designated *erosa.*
1895, Grote, Abh. Nat. Ver. Bremen, XIV, 100, type designated *erosa;* p. 122.

The genus *Anomis* presumably should be used in place of *Cosmophila* Bdv. *Gonitis* Gn., type *editrix* Gn., is probably synonymous. *Alabama* Grt., type *argillacea* Hbn., is closely allied and likely synonymous. Grote, 1895, Abh. Nat. Ver. Bremen, XIV, 122, has proven that his prior designation of *argillacea* as type of *Aletia* is not valid, the *Verzeichniss* having priority over the *Zuträge* as far as this genus is concerned. Hampson, 1905, Cat. Lep. Phal. B. M., V, 436, is apparently correct in designating *vitellina* as type of *Aletia,* a species belonging to the Hadeninae *(sensu Hampson).* Here it falls to the genus Hampson calls *Sideridis* (type *evidens* by Hampson, 1905, Cat. Lep. Phal. B. M., V, 436) but *Mythimna* Ochs. (type *albipuncta* by Duponchel, 1829, Hist. Nat. Lép. Fr., VII, (2), 71) will replace *Sideridis* Hbn. on our lists, with additional synonyms *Hyphilare* Hbn. (type *albipuncta* by Hampson, 1905, Cat. Lep. Phal. B. M., V, 436) and *Crocigrapha* Grt. (type *normani,* sole species). In place of *Mythimna* Ochs. on our lists *Cerastis* Ochs. (type *rubricosa* by Duponchel, 1829, Hist. Nat. Lép. Fr., VII, (2), 72) may be used. *Orthosia* Ochs. takes as type *instabilis* by Curtis, 1828, Br. Ent., I, 237, which, if Hübner's *Tentamen* be accepted, will fall as a synonym of *Graphiphora* Hbn. (type *gothica* sole species). This would take the place of *Monima* Hbn. as used by Hampson, replacing *Orthosia* of the Check List. If, however, the *Tentamen* is rejected, *Orthosia* may stand.

Anomis flava Fabr.
1775, Fabricius, Syst. Ent., p. 601, *Noctua.*

Mr. Tams has shown that *flava* Fabr. is apparently the oldest available name for the species with serrate male antennae; that it takes as synonyms *stigmatizans* Fabr. (1775, Syst. Ent., p. 601), *xanthindyma* Bdv. (1833, Lep. Mad., p. 94), *indica* Gn.

(1852, Noct., II, 396), *variolosa* Wlk., (1857, C. B. M., XI, 750), *edentata* Wlk., (1857, C. B. M., XI, 750), and presumably *aurantiaca* Prittwitz, (1867, Stett. ent. Zeit., XXVIII, 277), but that it is apparently unrepresented in the western hemisphere except by the race *fimbriago* Steph. (1829, Ill. Br. Ent., Haust., III, 67), which takes as synonym *serrata* B. & McD. (1913, Contr. N. H. Lep. N. A., II, (4), 169.).

A. flava and its synonyms should be intercalated on our lists so that *fimbriago* may be given its correct status.

Anomis erosa tingescens Dyar.

1913, Dyar, Ins. Insc. Menst., I, 103, *Cosmophila.*

1924, Tams, Trans. Ent. Soc. Lond., (1924), p. 22, *erosa, Cosmophila.*

Described from two females, Santiago, Cuba, (W. Schaus).

Mr. Tams sinks the name as a synonym of *erosa* Hbn., thus adding it to our lists.

Examination of Dr. Dyar's types in connection with the U. S. N. M. neotropical material indicates that they represent at least a valid race.

We know of no specimens from the United States so the name should not be added to our lists.

Anomis texana Riley.

1885, Riley, 4th Rept. U. S. Ent. Comm., p. 350; Notes, p. 120; biol., (pl. II, ff. 4-5-6), *Anomis.*

fuscostigma Ckll.

1885, Riley, 4th Rept. U. S. Ent. Comm., p. 350; Notes, p. 120; biol., (pl. II, f. 6 as *exacta*), *Anomis.*

1889, Cockerell, The Entomologist, (1889), p. 4, *texana* a, *Anomis.*

form **albostigma** Ckll.

1885, Riley, 4th Rept. U. S. Ent. omm., p. 350; Notes, p. 120; biol., (p. II, f. 6a as *exacta* var); *texana, Anomis.*

1889, Cockerell, The Entomologist, (1889) p. 4, *texana* b, *Anomis.*

Professor Cockerell applied the names *fuscostigma* and *albostigma* to the figures of Riley. Riley's notes (p. 120), indicate that when he gave the name *texana* to *exacta* Auct. & Riley nec. Hbn., that he considered the form with the dark

stigma typical of his species We therefore suggest the restriction of the name *texana* to forms similar to Riley's fig. 6, which will cause the name *fuscostigma* to fall into the synonymy. The name *albostigma* may be saved for the form with the white reniform.

Dr. Schaus has kindly supplied us with a specimen from Mexico similar to typical *texana*.

Anomis editrix Gn.

1852, Guenée, Spec. Gén., 41, Noct., II, 404, *Gonitis*.
1913, Dyar, Ins. Insc. Menst., I, 4, *edetrix* (!), *Gonitis*.

Described from Haiti.

We possess a single specimen from St. Petersburg, Florida, December, which was sent to Dr. Schaus and by him determined as *editrix*. The record is presumably authentic.

We might add that the Barnes Collection possesses two specimens of another species of *Anomis* labeled "Chokoloskee, Florida," but these may be dealers' material and we will not add another name to the lists because of uncertainty as to the authenticity of the labels.

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ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., MARCH, 1926.

Proof-reading and the News.

For at least a decade, the second page of the cover of the NEWS has borne the announcement: "Proof will be sent to authors only when specially requested." This notice was originally inserted in the interest of more prompt publication, with the idea of saving time which might be lost in the mails, or in non-receipt of proof by authors away from their offices or residences. It appears that this notice has given rise, in some quarters at least, to the impression that the NEWS is disinclined to allow authors the opportunity of looking over proofs of their articles. We wish to dissipate this idea. We shall gladly send proof to every contributor who desires it, and who will mark his MS. to this effect when sending it in, or who will notify us of his wish on receiving from us the acceptance of his paper for publication. If delays occur in receipt by us of corrected proof, such delays will mean nothing more than the possible postponement of the article in question to a later number of the NEWS.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE

An Early Record of a Commercial Entomologist.

In "The Unfortunate Traveller or the Life of Jacke Wilton," by Thomas Nashe, printed in London in 1594, Jack Wilton, the clever rogue of the tale, tells about his visit to Rome in part as follows: "There was a poore fellowe during my remainder there, that for a newe tricke that hee had inuented of killing *Cymeses* and scorpions, had his montebanke banner hung vp on a high pillar, with an inscription about it longer than the king of Spaines stile. I thought these *Cymesses* lyke the Cimbrians, hadde beene some straunge Nation hee hadde brought vnder, and they were no more but thinges lyke sheepe-lice, which aliue haue the most venimous sting that maye bee, and beeing dead, doe stinke out of measure, Saint Austen compareth heretikes vnto them." In a later edition, the word "sheepe-lice" was replaced by "lice."

Thomas Nashe, who has been called the founder of the historical novel, was born in 1567, at Lowestoft, but nothing ap-

pears to be known about where and when he died. According to H. F. B. Brett-Smith, editor of a recent reprint of "The Unfortunate Traveller[1]," it is doubtful if Nashe had ever been out of England, but it is probable that he talked with travellers or obtained suggestions from his readings. In view of this there may or may not be a trace of fact in the statement quoted above. However this is unimportant and does not detract from the drollness of the account.

HARRY B. WEISS, New Brunswick, New Jersey.

Lepidoptera Added to the British Museum.

We note from *The Entomologist* that the collection of Hesperiidae formed at the Hill Museum, Witley, which amounted to more than 30,000 specimens, and included many types has been presented to the National Collection in the British Museum. Prior to this, during 1922, Mr. Joicey also handed over to the same collection the whole of his collections of the following families of moths: Notodontidae, Lasiocampidae, Limacodidae, Epiplemidae, Thyatiridae, Callidulidae, Drepanidae, Cossidae, Bombycidae, Megalopygidae, Uraniidae, Psychidae, Thyrididae and Arbelidae, consisting of 29,717 specimens, upwards of 300 types. An exchange of his collection of *Agrias* with the Castniidae in Madame Fournier's collection was made.

Ants as Vermin-Exterminators.

We read in the *Entomologist's Record* that in Northern Siberia there are immense areas of forests which are inhabited only by a few wandering Tungus, nomads, depending entirely upon the chase for their existence. They have a strange intolerance of vermin, a characteristic that may well be copied by many civilized peoples. They object to the presence of various parasitic insects in their primitive abodes, and have an original way of getting rid of them. About the end of September they collect an ants' nest and bring it into their huts. The ants quickly exterminate the vermin, and the intense winter frosts then soon cause the ants to disappear, so that these practical myrmecologists can enjoy the warmth of their primitive homes in peace.

Butterfly Show in Los Angeles, California.

The Fifth Annual Butterfly Show of the Lorquin Natural History Club of the Southwest Museum will be held during the month of February, 1926. The number of specimens to be exhibited is estimated at 11,000, loaned by fifteen members.

There will be displays of local (California) material, also

[1]The Unfortunate Traveller by Thomas Nashe, The Percy Reprints, No. 1, Oxford, Basil Blackwell, 1920.

collections of West Coast butterflies, exhibits of Exotic butterflies and displays of articles manufactured by commercial concerns.

A large showing of aberrant butterflies of the West Coast will be one of the many attractions.

Collections of moths will be shown, exotics, and also an especially fine collection of American Noctuidae.

The prizes will be in ribbon form, and there will be nine awards, the highest award being for the discovery of new species. CHARLES INGHAM, *Secretary.*

Hoplothrips major (Hood), a Correction (Thysanoptera)

In the papers referred to below, *Hoplothrips major* (Hood) should replace *Trichothrips ulmi* (Fab.).

Trichothrips ulmi (Fab.) in New Jersey (Bull. Brook. Ent. Soc. Vol. XVIII, No. 3, pp. 94-97, 1923).

Additional notes on Fungous Insects (Proc. Biol. Soc. Wash. Vol. 34, 1921, p. 170).

This correction is necessary in view of a recent letter from Dr. L. O. Howard (to whom specimens had been sent for identification) enclosing a communication from Prof. J. D. Hood (to whom they had been forwarded). Prof. Hood states that the species has likely been described from some other country. He has specimens collected in Japan and is inclined to believe that the species is the one described in 1840 as *Thrips fungi* Zetterstedt in Ins. Lapponica, p. 312. However, in the absence of authentic specimens of that species, Prof. Hood thinks that it would be best to call it *Hoplothrips major* (Hood), 1914. According to his letter it is very common in New York, Pennsylvania, New Jersey and Connecticut and appears to have been introduced into America. The two papers listed above deal with its common occurrence in fungi and under rotten bark in New Jersey.

HARRY B. WEISS, New Brunswick, New Jersey.

Coleoptera from Nevada and Arizona.

Mr. Morgan Hebard and Mr. James A. G. Rehn are most indefatigable collectors. While their search is chiefly for Orthoptera, many interesting species of other orders have been added to the collections of the Academy of Natural Sciences of Philadelphia through their efforts. The Hebard-Rehn Expedition of 1924, visiting little known areas in central Nevada and southern Arizona, was no exception in this respect. As a result of that two months' trip the Academy is richer by three hundred seventy-one (371) specimens of Coleoptera alone.

Among the more interesting species have been added: *Cratocera capitata* Chd., *Lytta cooperi* Lec., *Eleodes wickhami*

Horn, *Embaphion elongatum* Horn, *Ammodonus granosus* Fall, *Cymatodera comans* Wolc., *Esthesopus parcus* Horn, *Acmaeodera cuprina* Spin. (a bright green form, not cotypical with Jalapa specimens), *Acmaeodera opacula* Lec., *Acmaeodera alicia* Fall, *Metaleptus femoratus* Schff., *Crossidius ater* Lec. (a red variety which may be new), *Conotrachelus arizonicus* Schff., *Agrilus cupreomaculatus* Duges.

Agrilus cupreomaculatus Duges was taken in the Baboquivari Mountains, southern Arizona, and is the first record of this species occurring north of the Mexican border; the type was described from Tupataro; there is one example of this beautiful species labeled Tepic in the United States National Museum. FRANK R. MASON, Philadelphia, Penna.

On the New Arachnid Genus Tijuca, Mello-Leitao.

There has just come to my hands the May, 1925, number of the *Boletim do Museu Nacional do Rio de Janeiro* (Vol. 1, No. 6), in which I am surprised to find a new genus of spiders of the family Zodariidæ described by Dr. Mello-Leitao under the name *Tijuca* (p. 461). *Tijuca,* the aboriginal name of the highest peak in the immediate vicinity of Rio de Janeiro, does possess a certain romantic significance, but it is not available for a lowly spider because Lesson (*Centurie Zoologique,* p. 30, pl. 6, 1830) appropriated it nearly a hundred years ago for a remarkably beautiful bird that was discovered in the same region. As I have had nothing to do with either the discovery or the diagnosis of the new spider, it is not my place to propose another generic name for it. That should be done, and done immediately, by Dr. Mello-Leitao, before the confusion has a chance to spread.

ERNEST G. HOLT, Carnegie Museum, Pittsburgh, Pa.

Entomological Literature

COMPILED BY E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted, but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

Papers of systematic nature will be found in the paragraph beginning with (N). Those pertaining to Neotropical species only will be found in paragraphs beginning with (S). Those containing descriptions of new forms are preceded by an *.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

Papers published in the Entomological News are not listed.

1—Trans., The American Entomological Society. 4—Canadian Entomologist. 5—Psyche. 8—The Entomologist's Monthly Magazine. 9—The Entomologist. 10—Proc. Ent. Soc. Washington. 13—Journal of Entomology and Zoology, Claremont, Cal. 14—Ent. Zeitschrift, Frankfurt a. M. 17—Ent. Rundschau, Stuttgart. 18—Internationale Ent. Zeit., Guben. 22—Bulletin of Ent. Research, London. 24—Annales, Soc. Ent. de France. 33—Bull. et Annal. Soc. Ent. Belgique. 39—The Florida Entomologist. 45—Zeit. f. Wissenschftl. Insekentb., Berlin. 51—Notulae Ent., Helsingfors. 59—Encyclopedie Ent., Paris. 63—Deutsche Ent. Zeit., "Iris." 64—Zeit., Oesterr. Ent. Ver., Wien. 69—Comptes Rendus, Acad. Sci., Paris. 75—Annals and Mag. of Nat. History, London. 77—Comptes Rendus, Soc. Biologie, Paris. 89—Zool. Jahrbucher, Jena. 104—Zeit. f. Wissen. Zool., Leipzig. 107—Biologisches Zentralblatt. 108—Jour. Washington Acad. Sci. 111—Archiv. f. Naturg., Berlin. 119—Proc., Nat. Acad. Sci., Washington. 141—American Naturalist. 154—Zoolog. Anzeiger.

GENERAL.—Bergroth, E. E.—Obituary with portrait. **51,** v, 101-5. **Buckstone, A. W. W.**—Migration of Insects. **9,** 1926, 5-8. **Butler, E. A.**—Obituary with portrait. **8,** 1926, 24. **van Emden, F.**—Zur kenntnis der eizaehn der arthropoden, insbesondere der coleopteren. **104,** cxxvi, 622-54. **Forbes, S. A.**—The lake as a microcosm. Bul. Nat. Hist. Surv., Illinois, xv, 537-50. **Forbin, V.**—Comment on nourrit "Les infirmes" dans un jardin zoologique.—La Nature, 1925, 382-3. **Hayward, K. J.**—Mites on insects. **9,** 1926, 14. **Hunter, W. D.**—Obituary with portrait and bibliography. **10,** xxvii, 169-81. **Light, S. S.**—Fauna and flora of apple bark. **75,** xvii, 126-49. **Lutz, A.**—Adolpho Lutz: a leader in South American medicine and biology. By M. M. Metcalf—Sci. Month., 1926, 113-4. **McAtee, W. L.**—Policies relating to type specimens of insects. **10,** xxvii, 181-7. **Maulik, S.**—Study of taxonomic zoology.—Nature, cxvii, 82. **Meissner, O.**—Zur richtigen betonung der lateinischen namen. **14,** xxxix, 146-7 (cont.). **Meissner, O.**—Wellentod der insekten. **18,** xix, 307-8. **Morse, A. P.**—Some rarities from Essex County, Mass. **5,** xxxvii, 298. **Pierce, W. D.**—Principles and utilization of climatic control of insects. Lectures in Appl. Ent., (1), Pt. 2, p. 81-113. **Roeber, J.**—Luft und inzucht. **17,** xlviii, 2-3. **Ruediger, E.**—Entomologie und zettelkatalog. **17,** xlviii, 3-4. **Uffeln, K.**—Industriemelanismus. **18,** xix, 301-5. **Weiss, H. B.**—Similarity of insect food habit types

on the Atlantic and western Arctic coasts of America. **141,** lx, 102-4. **Zur klaerung** der rassenfrage in der entomologie. **64,** x, 109-12.

ANATOMY, PHYSIOLOGY, MEDICAL, ETC.—Anderson, E. G.—Crossing over in a case of attached X-chromosome in Drosophila m.—Genetics, x, 403-17. **Bridges & Anderson**—Crossing over in the X-chromosome of triploid females of Drosophila.—Genetics, x, 418-41. **Demerec, M.**—Reddish—a frequently "mutating" character in Drosophila virilis. **119,** xii, 11-16. **Jeffrey & Hicks**—Evidence as to the cause of so-called mutations in drosophila.—Genetica, vii, 273-86. **Metz, C. W.**—Chromosome studies on Sciara (Diptera). **141,** lx, 42-56. **Muller, H. J.**—Regionally differential effect of X rays on crossing over in autosomes of Drosophila.—Genetics, x, 470-507. **Muller & Dippel**—Chromosome breakage by x-rays and the production of eggs from genetically male tissue in drosophila.—Brit. Jour. Exper. Biol., iii, 85-122. **Payne, N. M.**—Effect of environmental temperature upon insect freezing points.—Ecology, vii, 99-106. **Warren, E.**—Spermatogenesis in spiders and the chromosome hypothesis of heredity.—Nature, cxvii, 82-3.

ARACHNIDA AND MYRIOPODA.—Hayward, K. J.—Mites on insects. **9,** 1926, 14. **Kuekenthal & Krumbach.**—Handbuch der zoologie. iii. Tardigrada. Von F. Richters. pp. 1-68; Pentastomida. Von R. Heymons. pp. 69-128. **Millot, J.**—La secretion de la soie chez les araignees. **77,** xciv, 10-11. **Savory, T. H.**—Evolution in spiders. Sci. Progress, London, xx, 475-80. **Zebrowski, G.**—Preliminary report on the morphology of the American dog tick. **1,** li, 331-69.

(N) ***Chamberlin, R. V.**—New sp. of the lithobiid genus Nampabius from Tennessee. **4,** lvii, 291. ***Crosby & Bishop.**—A new gen. and two n. sps. of spiders collected by Bufo quercicus. **39,** ix, 33-6.

THE SMALLER ORDERS OF INSECTA.—Abbott, C. E.—Relative importance of vision and the chemical sense in Anax larvae. **5,** xxxvii, 315-8. **Johnson, C. W.**—Mantispa interrupta and M. brunnea in New England. **5,** xxxvii, 318. **Pulkkinen, A.**—Ueber die larven einiger odonaten. **51,** v, 111-14.

(N) ***Curran, C. H.**—Descr. of two insects found in imported food-stuffs. **4,** lvii, 292-3. ***Tillyard, R. J.**—Kansas

permian insects. VII. Order Mecoptera. Am. Journ. Sci., xi, 133-64.

(S) ***Snyder, T. E.**—New termites from Guatemala, Costa Rica and Colombia. **108,** xvi, 18-28.

ORTHOPTERA.—Glasgow, R. D.—Specimen of Melanoplus differentialis with four ocelli. **5,** xxxvii, 285-90. **Hollande, C.**—Les cellules a urates des Acridiens orthopteres et la genese de ces urates. **69,** clxxxi, 1175-6. **Iwanowa, S. A.**—Zur frage ueber die spermatophorbefruchtung bei den Acridodea (Locusta migratoria). **154,** lxv, 75-86. **Rabaud, E.**—Variation chromatique chez Mantis religiosa. **77,** xciv, 36-7.

(N) ***Hebard, M.**—North American genus Inscudderia (Tettigoniidae, Phaneropterinae). **1,** li, 321-30.

(S) ***Hebard, M.**—Dermaptera and Orthoptera from the state of Sinaloa, Mexico. II, Saltatorial Orthoptera. **1,** li, 265-310.

HEMIPTERA.—Neiswander, C. R.—On the anatomy of the head and thorax in Ranatra. **1,** li, 311-20. **Teyrovsky, V.**—Studie o larvach corixidi. (Etudes sur les larves des corixides.) Pub. Faculte Sci. Univ. Masaryk, Brno, 1925, Cis. 57, 13 pp.

(N) ***Drake, C. J.**—Concerning some Tingitidae from the gulf states. **39,** ix, 36-9.

LEPIDOPTERA.—Bird, H.—New life histories in Papaipema No. 23. **4,** lvii, 303-6. **Clark, A. H.**—Some unusual and interesting butterflies from eastern Massachusetts. **5,** xxxvii, 293-8. **Cook, W. C.**—Some weather relations of the pale western cutworm (Porosagrotis orthogonia). A preliminary study. Ecology, vii, 37-47. **Ochmann.**—Ein kleiner beitrag zur experimentellen beeinflussung der herbstgeneration von Van. urticae. **18,** xix, 257-60. **Paillot, A.**—Sur un vibrion parasite des chenilles de Pieris brassicae. **77,** xciv, 67-9.

(N) ***McDunnough, J.**—Notes on some sps. of the genus Anarta. **4,** lvii, 307-9. ***Reuss, T.**—Boloria reiffi. **18,** xix, 279-80. **Seamans, H. L.**—Notes on the genus Copablepharon in Alberta. **4,** lvii, 287-90.

(S) **Cockerell, T. D. A.**—Terias leuce in Argentina. **9,** 1926, 11. ***Ehrmann, G. A.**—New sps. of exotic Papilionidae. **59,** (B), III, vol. i, 88-92. ***Hering, M.**—The macrolepidoptera of the world. Fauna americana, Pt. 172, Fam. Dioptidae; beginning. ***Hering & Hopp.**—Eine sammelaus-

beute des W. Hopp aus dem Choco Kolumbiens. **63,** xxxix, 181-207. **Kremky, J.**—Neotropische Danaididen in der sammlung des Polnischen Naturhist. Staatsm. in Warschau. An Zool. Mus. Polonici Hist. Nat., iv, 141-275. ***Le Cerf, F.**—Description de quelques Morphos. **59,** (B), III, vol. i, 98-108. ***Lathy, P. L.**—Notes on the American Theclinae. On the identity of Catagramma idas. **75,** xvii, 35-47; 48. ***Stichel, H.**—Beitrage zur kenntnis der Riodiniden fauna Suedamerikas. VI. **45,** xx, 256-64.

DIPTERA.—Bischoff, W.—Die metamorphose der Liponeura decipiens var. minor (Blepharoceridae). **89,** li, Syst., 329-74. **Edwards, F. W.**—Extraordinary mating-habits in a mosquito. **8,** 1926, 23. **Schander & Meyer.**—Untersuchungen ueber die fritfliege. **111,** 1924, A, 12, p. 12-87. **Senior-White R.**—Physical factors in mosquito ecology. **22,** xvi, 187-248.

(N) ***Bequaert, J.**—Notes on Hippoboscidae. I. Lynchia Weyenbergh and Lynchia Speiser are not congeneric. **5,** xxxii, 265-77. ***Cole, F. R.**—Notes on the diptera of Laguna Beach, Cal. **13,** xvii, 55-59. **Curran, C. H.**—Some syrphid synonymy. **4,** lvii, 307. ***Curran, C. H.**—(See under Smaller orders.) **Hendel, F.**—Neue uebersicht uber die bisher bekannt gewordenen gattungen der Lauxaniidae, nebst beschreibung neuer gattungen u. arten [new neotropical species described]. **59,** (B), II, vol. ii, 103-12. ***Johnson, C. W.**—New sps. of diptera from N. Carolina and Florida. **5,** xxxvii, 299-302. **Seguy, E.**—Sur les Lucilia et les Chrysomyia de Macquart et de Robineau-Desvoidy. II, **59,** (B), III, vol. ii, 93-4. **Shannon, R. C.**—Note on the distribution and synonymy of a myiasis producing fly (Lucilia argyricephala). **10,** xxvii, 196.

(S) ***Brues, C. T.**—Some myrmecophilous Phoridae from the Neotropical region. **5,** xxxvii, 303-12. ***Curran, C. H.**—Descriptions of four new Neotropical Diptera. **1,** li, 259-64.

COLEOPTERA.—Blair, K. G.—On the luminosity of Pyrophorus. **8,** 1926, 11-15. **Chittenden, F. H.**—Historical notes on Brachyrhinus rugifrons. **4,** lvii, 290-1. **Forbes, W. T. M.**—Second abdominal pleurite in the higher coleoptera. **5,** xxxvii, 290-2. **Meissner, O.**—Rueckgang auch der kaeferfauna. **14,** xxxix, 137.

(N) ***Fall, H. C.**—New coleoptera. XI. **4,** lvii, 309-12. ***Glasgow, R. D.**—New Phyllophaga (Scarabaeidae). **4,** lvii, 293-6.

(S) ***Achard, J.**—Notes sur les Plagiodera Amerique et

descriptions especes nouvelles. **24,** xciv, 427-39. ***Britten, H.**—A new bromeliadicolous ptilid (Trichopterigid) beetle from Trinidad. **8,** 1926, 10-11.

HYMENOPTERA.—Alpatov, W. W.—Ueber die verkleinerung der russellange der honigbiene vom sueden nach dem norden hin. **154,** lxv, 103-111. **Kroening, F.**—Ueber die dressur der biene auf toene. **107,** xlv, 496-507. **Parker, J. B.**—Notes on the nesting habits of Bembex comata. **10,** xxvii, 189-95. **Robertson, C.**—Habits of the hibiscus bee, Emphor bombiformis. **5,** xxxvii, 278-82. **Sturtevant, A. H.**—Notes on the ant fauna of oak galls in the Woods Hole region. **5,** xxxvii, 313-4. **Verlaine, L.**—Sur la precarte des caracteres distinctifs des Vespa vulgaris et germanica et sa signification biologique. **33,** lxv, 315-49.

(N) **Gahan, A. B.**—Interesting records of two little-known parasitic hymenoptera. **10,** xxvii, 188. **Meyer, R.**—Zur bienengattung Sphecodes. **111,** 1924, A, 12, p. 1-12. [Also neotropical.]

SPECIAL NOTICES.

British Hydracarina. By Soar & Williamson. Pub. by The Ray Society, London, 1925, 214 pp., pls. Altho this work treats of the British species, it should be of interest to American students on account of its monographic nature.

THE NORTH AMERICAN DRAGONFLIES OF THE GENUS SOMATOCHLORA, by E. M. WALKER. University of Toronto Studies, Biological Series No. 26. 1925. 8vo., 202 pages, 17 text figs., 35 pls.

In 1912 the same author put forth a notable work having a similar title, except that the generic name was *Aeshna;* it formed No. 11 of this same Biological Series; a notice of it appeared in the NEWS for June, 1912, pages 283-6. During much of the intervening time Dr. Walker has been engaged upon the present work, for, like *Aeshna, Somatochlora,* the largest of the Corduliine genera, is more fully represented in species in the northern part of North America and his location in Toronto has enabled him to study these dragonflies more easily than students farther south.

The species of *Somatochlora,* as the name suggests, are, for the most part, green insects, especially of a metallic green on head and thorax, the eyes of a brilliant green above. Many of them, in the early days of adult life, "commonly fly at a considerable height, often 30 to 50 feet or more," so that "often it is hopeless to attempt their capture." "At other times one

may find an individual patrolling a small shady opening, partly surrounded by trees, and at such times they fly back and forth or around the space at an average height of about 4 or 5 feet and are then fairly easily captured." "Few of the species are easily obtained in settled districts; most of them are local even where the genus is well represented, and they are seldom abundant even in the immediate vicinity of their breeding places. They are shy denizens of the wilderness, being seen at their best in the northern coniferous forests and the mountains, and in consequence of the comparatively remote nature of their habitats our knowledge of their habits and early stages, as well as their taxonomy, has lagged behind that of other genera of Odonata." Those of us who have watched *Somatochlora* hopelessly overhead in the pine barrens of New Jersey, or have sought it along Indianan creeks, appreciate full well Dr. Walker's remarks on "the rarity of large series of Somatochlora in collections and the difficulties attending the field study of the species." Yet he has examined about 1300 specimens in his own and other museums.

Somatochlora comprises about 36 described species, 21 in North America, 16 in Eurasia; *S. sahlbergi* Trybom, 1889, from Siberia, regarded as identical with *S. walkeri* Kennedy, 1917, from Alaska, is common to the two continents. In North America, Fort Simpson on the Mackenzie River and the Kuskokwim River, Alaska, both at about 61° 40′ North Latitude, are the most northern localities yet observed for this genus, while a female of *S. filosa* has been taken east of Fort Meade, Florida. The genus is most richly represented in the Canadian life zone.

The treatment of the subject matter is similar to that in the author's *Aeshna,* although the order followed is not always the same. The general part of the present work occupies 37 pages, as compared with 54 in the former; special mention should be made of the description of the eggs and first seven larval instars of *S. kennedyi* and illustrated in plates xvii and xxv. The development, under laboratory conditions, was very slow: eggs collected in July, 1923, hatched in April, 1924; six or seven moults occurred up to September 29, after which and up to Jan. 9, 1925, no moults were recorded, although at this last date the nymphs were still in good condition. Details are reserved for future publication when the life history has been more fully worked out. Dr. Walker thinks at least three winters are passed in the course of the life cycle and that very probably in the far north, if not elsewhere, four years may be required.

"Southern species of *Somatochlora* tend to be more slender and more elongate than northern, somewhat less metallic, with a

scantier pubescence. . . . No definite geographical races appear in the material I have examined, unless the form described as *S. incurvata* is merely a large local southern race of *S. forcipata.*"

Twenty-one species are recognized, two of them (*georgiana* and *whitehousei*) here described as new. Separate keys to the adult males, to the adult females and to the known nymphs (13 species) are given. The full specific descriptions occupy 136 pages; many of them are accompanied by a map of North America in the text showing the distribution of the species in question. Twelve pages contain the list of references.

The first four plates show dorsal and lateral views of the male appendages; apices of female abdomens follow in three more. The color patterns of the entire body for both sexes, in black and white halftones (not, alas, as in the beautiful colored figures of the *Aeshna* monograph!) fill pls. viii-xiv. Then come the genitalia of the second abdominal segment of the males (2 pls.), the early stages (9 pls.), reproductions of photographs of body and wings (8 pls.) and of two habitats (2 pls.).

Like its predecessor, this monograph has been well and carefully done and few works in odonatological literature equal it in the detailed information which it contains.

P. P. CALVERT.

Doings of Societies.

The Third International Congress of Entomology, Zürich, 19th-26th July, 1925.

I. Resolution, Horn—Escherich—Nuttall.

The Section II for Systematics and Geographical Distribution having had under consideration the relation of Systematics to Applied Entomology wish to record the following observations and recommendations:

OBSERVATIONS. 1. An enormous expansion in Applied Entomology has recently taken place throughout the world. This has necessitated, as a first step, the exact determination of an immense number of insects. The result has been to show the utter inadequacy of the present means for undertaking such work.

2. While the existing organization of Applied Entomology is efficient in some countries (notably in the United States and Great Britain), the number of trained workers available in all countries is generally recognised as totally insufficient. Everywhere the systematic specialist is overburdened, and his load has now become an intolerable one.

3. Neither Systematic nor Applied Entomology has yet received due recognition in academic circles. Entomology has long been the Cinderella of the Sciences. Entomological work, especially Systematic Entomology, has been regarded as being definitely inferior in quality to work in other branches of Zoology. It is within the knowledge of the framers of this resolution that postgraduate students have been advised not to undertake research in Systematic Entomology on the ground that it led nowhere. At few, if any, European Universities is Systematic Entomology accepted as a qualification for a degree.

4. Such facts constitute a grave danger to science, both pure and applied, and, as a remedy for this state of affairs, the Section II proposes the following

RECOMMENDATIONS. A. With regard to Universities:

1. That the teaching of Systematic Entomology at Universities be adequately provided for by the establishment of chairs especially devoted thereto;

2. That meritorious systematic work should be regarded as qualifying candidates for ordinary and advanced degrees at Universities.

B. With regard to Museums:

3. That immediate steps should be taken to increase the number of entomological assistants, both systematic and technical, in Museums and that this should be done in a manner proportionate to the amount of specific work entailed;

4. That in the appointment of persons to administrative posts in Museums and like institutions due regard, inter al'a, should be given to a candidate's experience in systematics.

C. With regard to Bibliographical Institutions:

5. That each country should have a central Bibliographical Institute (Library) for Entomology.

This Resolution, framed by W. Horn, K. Escherich and G. H. F. Nuttall, and in addition signed by C. Börner, J. Davidson, H. Eidmann, K. Eckstein, K. Jordan, R. Kleine, O. Morgenthaler, A. Schuberg, M. Schwartz, F. Stellwaag, J. Waterston and C. B. Williams, was unanimously agreed to at the General Meeting of the Congress on the 25th July.

II. Resolution proposed by the Section V. for Applied Entomology.

This Congress considers it essential that the problems underlying Applied Entomology should be studied, and desires to impress upon Governments and Institutions concerned with Applied Entomology that time must be devoted to Systematic Entomology and fundamental research such as Insect Physiology, Ecology and Pathology, since only by the study of these can insect control be placed on a sound basis.

This Resolution, signed by C. Bolivar Pieltain (Spain), C. Börner (Germany), J. Davidson (England), T. Bainbrigge Fletcher (India), L. O. Howard (U. S. A.), J. Jablonowski (Hungary), R. Stewart MacDougall (England), G. A. K. Marshall (England), J. M. Munro (England), O. Schneider-Orelli (Switzerland), F. Schoevers (Holland), F. Stellwaag (Germany), W. R. Thompson (U. S. A.), I. Trägardh (Sweden), F. W. Urich (Trinidad), C. B. Williams (Egypt) was unanimously agreed to at the General Meeting of the Congress on the 25th July.

Nomenclature.

The provisional committee, elected for the duration of the Congress, proposed and the Congress, in its General Meeting of 25th July, unanimously passed the following resolution:

The Congress considers it desirable to express the opinion

(1) that in future (i. e., from the time when the revised rules of nomenclature have become law) it shall be compulsory for the publication of a new genus to be accompanied by a description of the genus as well as by the citation of an already known species or by the description of a new one; and

(2) that in future a new name published must be accompanied by a description in words (or a reference to a former such description) also in the case of Lepidoptera.

Dr. J. Waterston proposed and the Meeting unanimously agreed that this Resolution be sent to all Editors of Entomological Journals.

OBITUARY.

The *Entomologist's Monthly Magazine* and *The Entomologist,* of London, for November last, contain obituary notices of Prof. HAROLD MAXWELL LEFROY, whose death on October 14, 1925, as a result of exposure to insecticidal gases in his laboratory in London, attracted universal attention in the daily papers of the time. We summarize their accounts as follows: He was born January 20, 1877, at Itchell Manor, Crundall, Hants, England; educated at Marlborough School and at King's College, Cambridge, and at the latter, under the influence of Dr. David Sharp, specialized in entomology. From 1899 to 1903, he was Entomologist to the Imperial Department of Agriculture for the West Indies, and was stationed chiefly at Barbados. From 1903

to 1910, he was Imperial Entomologist for India, then returned to England. In 1912 he became Professor of Entomology in the Imperial College of Science at South Kensington, a position which he occupied at his death, and where he was largely occupied with researches into the life histories and the means of destruction of injurious insects. During the Great War he was called to the British army in Mesopotamia to deal with the house-fly problem, and later to Australia on account of the grain weevils. His chief publications are *Indian Insect Pests* (1906), *Indian Insect Life* (1910) and *A Manual of Entomology* (1923). A notice of the second of these will be found in the NEWS for February, 1910, page 91. The writer in the first magazine cited at the beginning of this notice links the name of Lefroy with that of Arthur Bacot as those of martyrs to the cause of entomological research in the service of man.

On January 30, 1926, GEORGE ALEXANDER EHRMAN died at his home, 2314 Sarah Street, Pittsburgh, in the sixty-fourth year of his age.

Mr. Ehrman was born February 2, 1862, not far from the residence, which he owned, and in which he had lived for the last thirty-six years of his life. In his boyhood he completed a course in the public schools of Pittsburgh and then began to earn his livelihood in a glass-factory. He became a very skillful workman and, being of an inventive turn, produced a number of devices, which came into general use in the manufacture of blown and pressed glass. He was long connected with the Macbeth-Evans Glass Company and the United States Glass Company of Pittsburgh. During the later years of his life he was employed in the Research Laboratory of the Mesta Machine Company at West Homestead, Pennsylvania.

Mr. Ehrman amassed a competence by energy and thrift and was able during most of the years of his later life to gratify his inborn love of natural history. He was particularly interested in entomology and especially in the Lepidoptera and Coleoptera. He likewise took an interest in ornithology. He was one of a group of young men in Pittsburgh, chiefly of German

descent, who in the final decade of the last century began to collect and study the insect-fauna of western Pennsylvania. He was one of the original members of the Entomological Society of Western Pennsylvania. Subsequently he became a member of a number of similar societies both in this country and in Europe.

At first Mr. Ehrman made extensive collections of the Lepidoptera and Coleoptera of western Pennsylvania; later he became attracted to the showier exotic forms, making a specialty of the genus *Papilio*. His collection, representing this genus, is very extensive. Not long before his death he informed the writer of these lines that he believed his collection to contain almost all of the species which have been attributed to this genus, as well as a great number of subspecific forms and aberrations. It is understood that his entire collection in pursuance of his wishes is to become the property of the Carnegie Museum.

Mr. Ehrman wrote a number of articles, which appeared from time to time in various entomological publications. In these he either described species and varieties, which he believed to be new to science, or recorded his observations upon habits or habitats. More than a dozen of his papers appeared in the earlier volumes of ENTOMOLOGICAL NEWS; others were published in *The Journal of the New York Entomological Society*, the *Canadian Entomologist*, and elsewhere. These articles, so far as the Lepidoptera are concerned, mainly relate to the genus *Papilio*, the genus *Catocala*, and the butterflies and moths of Liberia, from which country he received a good deal of interesting material. His papers of coleopterological content treat mainly the various species of the genus *Cychrus* and its allies, of which he brought together a considerable assemblage from all parts of the world.

Mr. Ehrman was an industrious and enthusiastic worker, a genial companion, and a good story-teller, whose mirth-provoking tales of life in a glass-factory will long be remembered by his friends. He never was married. He is survived by a brother, Mr. Robert Ehrman, and two sisters, Mrs. Elizabeth Fritz, of Pittsburgh, and Mrs. Kate Roessler, of Terre Haute, Indiana.

W. J. HOLLAND.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Will send volumes XXV (1921) and XXVII (1923), Revista Chilena de Historia Natural, in exchange for School Entomology by Sanderson & Peairs and Classbook of Economic Entomology by Wm. Lochhead (latest editions) sent to me by registered mail. Will give vol. XXV also for a copy of American Insects by V. L. Kellogg (last edition) sent registered. Prof. Dr. C. E. Porter, Casilla 2974, Santiago, Chile.

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Wanted—For Cash. U. S. Bureau of Entomology Technical Series 5; and Bureau Circular 3, 27, and 132.—State Entomologist, Capitol Annex, Madison, Wisconsin.

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